

Method of  
**SPLITTING AND QUARTERING SAMPLES**  
 LDH DESIGNATION: TR 108-67

### Scope

This procedure is intended for the reducing of the gross sample to laboratory size. The use of a sample splitting device is preferred. (See Figures 1 and 2.) However, hand quartering is acceptable if carefully performed.

### Apparatus

1. Splitting device similar to Figures 1 and 2.
2. Quartering Canvas, Heavy Kraft paper, Heavy Polyethylene and/or any other suitable surface.

ficiently wide to permit easy passage of the largest particles in the sample and yet not so wide that a non-representative separation is obtained. Generally, the width of openings should be approximately 50 per cent larger than the largest particles in the sample to be split.

3. Thoroughly mix the sample and spread it evenly in increments small enough to prevent clogging, across the pan or hopper. The pan or hopper used with a riffle type splitter shall be equal in width to the overall width of the chutes so that equal amounts of material will flow through each chute during the splitting operation.



Figure 1

### METHOD A

#### Splitting sample with mechanical device

1. Periodically check the device for accuracy by taking a dry sample of material which tends to segregate and dividing it into eight or more equal parts by use of the splitter. Then weigh and grade several of the parts and compare.
2. The splitting device should have openings suf-

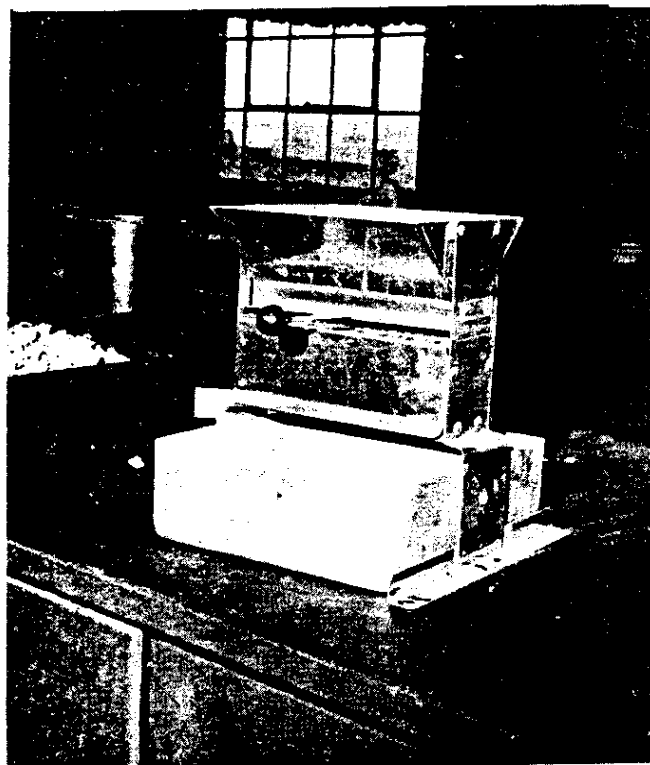


Figure 2

### METHOD B

#### Hand quartering

1. Sample weighing over 100 pounds.
  1. Mix and place the sample on a quartering surface as shown in Figure 3. Place the material into the center to form a cone so that the material spills over the cone equally in all directions. Dampen samples which tend to segregate before proceeding with the

following steps.

2. Flatten the cone, spreading the material to a circular layer of uniform thickness as shown in Figure 4.

3. Insert a rod (a stick or pipe may be used for this purpose) beneath the canvas and under the center of the pile, then lift both ends of the rod simultaneously, dividing the sample into two equal parts. Remove the rod leaving a fold of canvas between the divided portions. (See Figure 5.)

4. Insert the rod under the center of the pile at right angles to the first division and again lift both ends of the rod simultaneously as shown by Figure 6, dividing the sample into four equal parts.

5. In lieu of dividing the sample by use of a rod, a square point shovel or similar device may be used to divide the sample into four equal parts, making sure fines are included with the proper split portions.

6. Remove two diagonally opposite quarters, being careful to clean the fines from the quartering surface. (See Figure 7.)

7. Remix the remaining material. Place it in the center so that a cone is formed as before. Repeat the quartering process until the sample is reduced to the

desired size.

## II. Samples weighing 25 to 100 pounds.

1. Place the sample on the quartering surface and mix the sample thoroughly. If canvas or heavy polyethylene is used as a quartering surface, mix by alternately lifting each corner and pulling it over the sample toward the diagonally opposite corner, causing the material to be rolled. Dampen material which tends to segregate.

2. Flatten and quarter as specified above.

## III. Samples weighing less than 25 pounds.

1. Place the sample on a quartering surface. Mix thoroughly with a trowel and form the material into a conical pile. Dampen material which tends to segregate.

2. Flatten the cone by pressing it down with a trowel.

3. Divide the material into quarters with the trowel and remove diagonally opposite quarters, making sure fines are included with the proper split portions.

4. Repeat the above process until the sample is reduced to desired size.

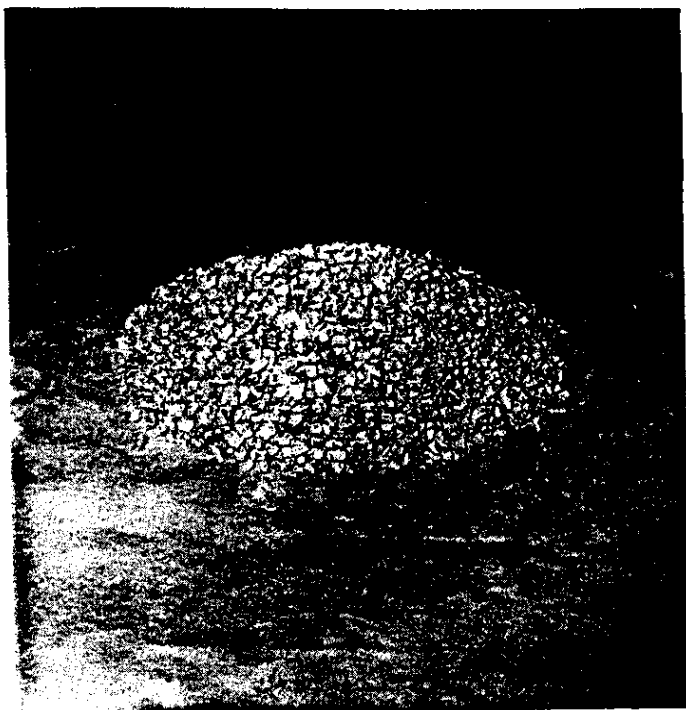


Figure 3

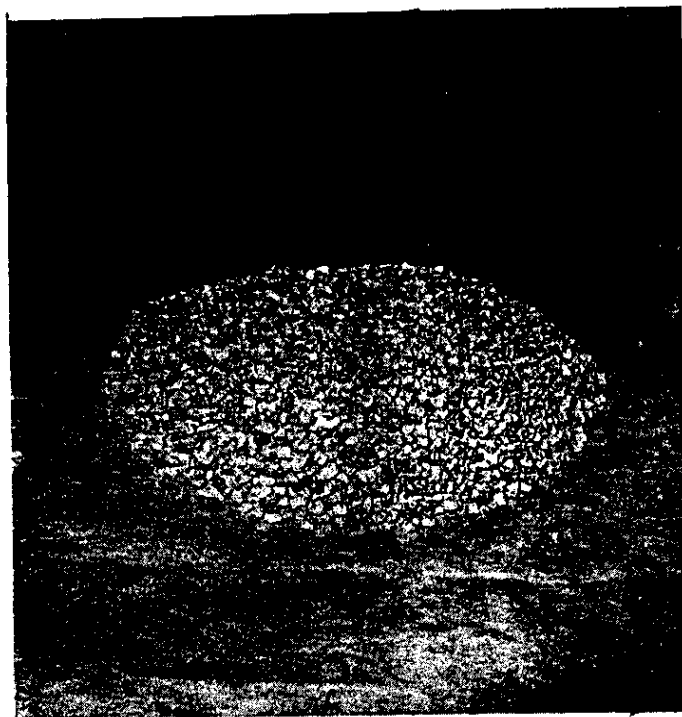
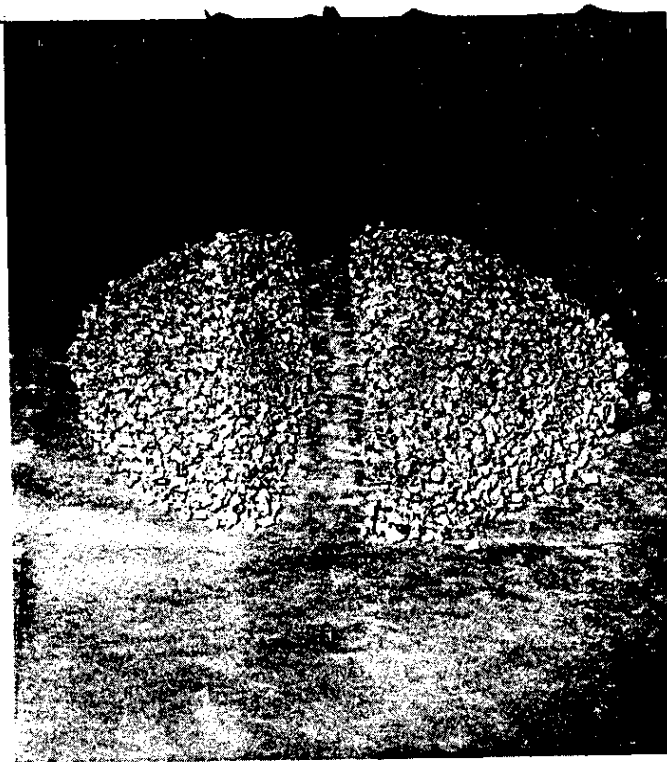
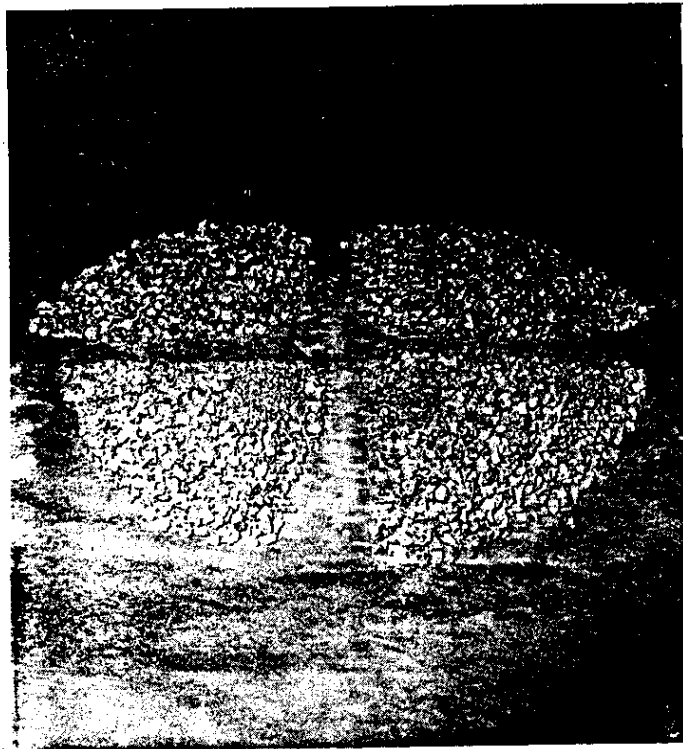


Figure 4



*Figure 5*



*Figure 6*



*Figure 7*